



## Faculty of Applied Sciences

### ELEC2660 Power electronic

[30h+30h exercises] 5 credits

This course is taught in the 1st semester

**Teacher(s):** Francis Labrique  
**Language:** French  
**Level:** Second cycle

#### Aims

This course is devoted to the analysis of power electronic converters and to their application to motor control and power management in electrical networks.

#### Main themes

Identical to the contents of the course

#### Content and teaching methods

- Main types of power semiconductors
  - Basic structure and working principle of power electronic converters
  - DC-DC, AC-DE, DC-AC and AC-AC converters
  - Application to motor control and power management in electrical networks
  - Dynamical modelling and control of power electronic converters as part of automatic systems.
- Design and realization of power electronic converters in the frame of the project in Mechatronics  
 Study and simulation of a power electronic converter.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites :

ELEC2370 or ELEC2751 : Measurements and electrical circuits

Assessment :

Exam during the session + assessment on the practical works during the year

Support :

This lecture refers to : G. Segquier, R. Bausière, F. Labrique : Electronique de puissance, éd. Dunod

#### Other credits in programs

<b>ELME22/M</b>	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	Mandatory
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